WHAT IS CLAIMED IS:

1. A semiconductor switch driving circuit comprising:

a transformer;

a primary side area provided on the primary side of the transformer for controlling current on the primary side of the transformer according to a control signal for controlling a semiconductor switch; and

a secondary side area provided on the secondary side of the transformer for directly driving a switching device, voltage between the gate and the emitter of the switching device being continuously kept positive, voltage between the gate and the emitter being continuously kept negative and voltage between the gate and the emitter being alternately switched in positive and negative.

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2. A semiconductor switch driving circuit according to Claim 1, wherein, in the primary side area, a control signal is input to transmit power for controlling plural switching devices to the secondary side area and back electromotive force caused when current flowing in the transformer is cut off is absorbed.

3. A semiconductor switch driving circuit according to Claim 1,the secondary side area receives the power supplied from the primary side area and transmits the power for controlling plural switching devices to the plural switching devices, and the plural

switching devices receive the power supplied to the secondary side area of the semiconductor switch driving circuit and cause or prevent current to flow for switching.

4. A semiconductor switch driving circuit according to Claim 1, wherein the source of P channel MOSFET is connected to a power terminal, the drain of the P channel MOSFET is connected to the anode of a diode, the cathode of the diode is connected to a terminal at one end of a primary winding of a transformer and back electromotive force between the terminal at one end of the primary winding of the transformer and a terminal at the other end of the primary winding of the transformer is inhibited when the P channel MOSFET conducts.

5. A semiconductor switch driving circuit according to Claim 1, wherein in the primary side area, a control signal input terminal (PL) is connected to the base of an NPN bipolar transistor (108) via a resistor (105) and a capacitor (104) respectively connected in parallel, the base and the emitter of the NPN bipolar transistor (108) are connected via a resistor (106) and the emitter is connected to a ground terminal (GND),the collector of the NPN bipolar transistor (108) is connected to the gate of a P channel MOSFET (110) via a resistor (107), the gate and the source of the P channel MOSFET (110) are connected via a resistor (109) and the source is connected to a power terminal (VDD),the drain of the P

channel MOSFET (110) is connected to the anode of a diode (111), the cathode of the diode (111) is connected to the drain of a N channel MOSFET (114) and a terminal (127a) of a primary winding of a transformer (127), the gate and the source of the N channel MOSFET (114) are connected via a resistor (113) and the source is connected to a ground terminal (GND), a control signal input terminal (N) is connected to the gate of the N channel MOSFET (114) via a resistor (112), a control signal input terminal (NL) is connected to the base of an NPN bipolar transistor (120) via a resistor (117) and a capacitor (116) respectively connected in parallel, the base and the emitter of the NPN bipolar transistor (120) are connected via a resistor (118) and the emitter is connected to a ground terminal (GND), the collector of the NPN bipolar transistor (120) is connected to the gate of a P channel MOSFET (122) via a resistor (119), the gate and the source of the P channel MOSFET (122) are connected via a resistor (121) and the source is connected to a power terminal (VDD),the drain of the P channel MOSFET (122) is connected to the anode of a diode (123),the cathode of the diode (123) is connected to the drain of a N channel MOSFET (126) and a terminal (127d) of the primary winding of the transformer (127), the gate and the source of the N channel MOSFET (126) are connected via a resistor (125) and the source is connected to a ground terminal (GND), a control signal input terminal (P) is connected to the gate of the N channel MOSFET (126) via a resistor (124), terminals (127b, 127c) of the primary winding of the

transformer 127 are connected to a center tap (135), the center tap (135) is connected to a power terminal (VDD) and is connected to a ground terminal (GND) via a capacitor (115).

Sub B2

6. A semiconductor switch driving circuit according to Claim 2, wherein the secondary side area is provided with plural switching devices and plural gate driving sections for respectively directly driving the switching device and the switching devices are connected in series.

7. A semiconductor switch driving circuit according to Claim 6, wherein the switching device is an insulated gate bipolar transistor (IGBT).

8. A semiconductor switch driving circuit according to Claim 1, wherein the secondary side area has a Zener diode for preventing electromotive force generated on a secondary winding by back electromotive force caused on a primary winding of the transformer.

9. A semiconductor switch driving circuit according to Claim 1, wherein, in the secondary side area, a terminal at one end of a secondary winding of the transformer is connected to a first Zener diode,

a second Zener diode is connected to a gate of a specific switching device via a first resistor, wherein same kind of

polarities of the first and the second Zener diode are directly connected in series with the polarities face to face,

a terminal at the other end of the secondary winding of the transformer is connected to the emitter of the specific switching device,

a second resistor and a capacitor are connected between the second Zener diode and the emitter of the specific switching device, and

wherein a structure comprising the secondary winding of the transformer and the switching device connected via a gate driving section is plurally provided.

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10. An electrotherapy appratus for supplying a high-voltage electric pulse to a living body for electrotherapy comprising:

a semiconductor switch driving circuit containing:

a transformer;

a primary side area provided on the primary side of the transformer for controlling current on the primary side of the transformer according to a control signal for controlling a semiconductor switch; and

a secondary side area provided on the secondary side of the transformer for directly driving a switching device, voltage between the gate and the emitter of the switching device being continuously kept positive, voltage between the gate and the

emitter being continuously kept negative and voltage between the gate and the emitter being alternately switched in positive and negative,

wherein the high-voltage electric pulse is supplied via the switching device.